



# Project Fact Sheet

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## *Mineral Recovery from Geothermal Brines*

### GOALS

- Develop and refine chemical processing methods for extracting silica and manganese from geothermal brines.
- Generate energy for California.
- Reduce maintenance and operating costs.



### PROJECT DESCRIPTION

This project will demonstrate the extraction of commercially valuable amorphous silica and manganese from the brines at the Salton Sea geothermal fields. This research will result in the development of a chemical processing methods for recovering high purity silica and manganese and construction on a pilot scale.

Commission funds will be used for silica purification, silica pH control and surface area optimization. Commission funds will also be used to fund manganese extraction field tests, manganese/iron separation and manganese extraction/separation field tests. Extracting these minerals, as well as continued improvements in brine scaling control and corrosivity, should result in cooling the brine to lower temperatures before injection. The effect of this additional cooling process will result in more power extraction from the same quantity of brine.



### BENEFITS TO CALIFORNIA

MidAmeican Energy Holdings Company's (MidAmerican) research is aimed at recovering useful minerals from the geothermal brines, therefore creating a new revenue stream, and making geothermal energy a more competitive with other renewable energy sources and natural gas. These innovations will benefit the electrical consumer by reducing the production and operating costs of geothermal power and landfill disposal costs.

A typical Salton Sea geothermal power plant can generate up to 120 tons of brine filter cake material a day. If successful, this pilot project could potentially reduce the waste stream to 12 tons a day, thereby saving landfill space and reducing operations and maintenance costs.

A commercial scale facility is projected to result in 70 to 90 permanent jobs.

## **FUNDING AMOUNT**

Commission	\$904,340
Match	\$904,340
Total	\$18,088,680

## **PROJECT STATUS**

On going.

## **FOR MORE INFORMATION**

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